REMARKS

Status of the Claims

Prior to entry of this amendment, claims 1-50 are pending in the application. Of these claims, claims 27-50 are withdrawn from consideration. All pending claims stand rejected as follows:

- Claims 1-6, 11-17, 19, 22, and 24 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Publication No. 2002/0171077 A1 to Chu *et al.* ("Chu").
- Claims 7-10, 18, 20, 21, 23 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chu in view of Wolf *et al.*, *Silicon Processing for the VLSI ERA,* Vol. 1: Process Technology, pp. 182-183 and 307-308 (1986) ("Wolf").
- Claims 25 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chu in view of U.S. Patent No. 4,764,248 to Bhattacherjee *et al.* ("Bhattacherjee").

In view of the following remarks, reconsideration and withdrawal of all grounds of rejection are respectfully requested.

Amendments to the Claims

Applicants cancel withdrawn claims 27-50 without prejudice and without any intention of disclaiming the subject matter thereof. In addition, Applicants hereby amend claims 1 and 22 to more particularly point out and distinctly claim the subject matter Applicants regard as their invention. No new matter has been introduced; support for the amendments is found throughout the specification, for example, at paragraphs [0050]-[0051], FIG. 2A, and in claim 22 as originally filed. Upon entry of these amendments, claims 1-26 will be pending and under consideration.

Amendments to the Drawings

The drawings are objected to as failing to comply with 37 C.F.R. §1.84(p)(5). Applicants hereby submit corrected drawing sheets in compliance with 37 C.F.R. §1.121(d). Support for the amendments to the drawings can be found in paragraphs [0050]-[0051]. Applicants respectfully request entry of the proposed drawing changes, as well as reconsideration and withdrawal of the objection to drawings.

Amendments to the Drawings

The attached replacement sheets of drawings include changes to FIGS. 2A-2B and FIGS. 3A-3B. These sheets, which include FIGS. 2A-2B and 3A-3B, replace the original sheets including FIGS. 2A-2B and 3A-3B. FIGS. 2A and 2B have been amended to more particularly point out the element to which the numeral 550 refers. FIGS. 3A and 3B have been amended to been more particularly point out the element to which the numeral 650 refers.

Attachment: 2 Replacement Sheets

2 Annotated Sheets Showing Changes

Rejections under 35 U.S.C. §102(e)

Claims 1-6, 11-17, 19, 22, and 24 are rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Chu. Applicants respectfully traverse this rejection to the extent it is maintained over independent claim 1, as amended, and claims 2-6, 11-17, 19, 22, and 24, dependent therefrom, for at least the reasons provided below.

For anticipation under 35 U.S.C. §102(e), the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. See M.P.E.P. §706.02. Applicants respectfully submit that Chu fails to meet this exacting standard with respect to claims 1-6, 11-17, 19, 22, and 24.

Specifically, Chu does not teach a method of forming a semiconductor structure that includes depositing a screening layer over at least a portion of a top surface of a strained semiconductor layer and introducing dopants into the semiconductor structure through the screening layer as recited in independent claim 1, as amended.

As explained in the Applicants' specification, the screening layer affects the introduction of dopants by scattering them during implantation, thereby reducing the probability of ion channeling. The screening layer also hinders out-diffusion of dopants during the annealing step. Additionally, the screening layer provides improved protection against contamination by particles during ion implantation. See Specification, paragraphs [0012] and [0050]-[0051].

In contrast, Chu appears to disclose a semiconductor device having a gate oxide layer disposed over a strained semiconductor layer. The purpose of the gate oxide of Chu is vastly different than that of the screening layer recited in independent claim 1, as amended. Specifically, the gate oxide of Chu merely serves as an insulator layer between the gate contact and the channel layer in the subsequently-formed semiconductor device. Chu does not disclose introducing dopants through its oxide layer. In Chu, the gate oxide is grown or deposited followed by a p-type doped poly-silicon layer. The CMOS circuit is then fabricated by etching the poly-silicon to form the gates of the n- and p-type CMOS devices, which then act as implant masks for formation of p-typed doped region 129, and n-type doped region 130. See Chu, page 6

at paragraph [0052]. Thus, Chu teaches introducing the dopants into its semiconductor structure beside, not through the gate oxide.

Accordingly, because Chu does not teach or suggest every element of independent claim 1, as amended, Applicants respectfully submit that Chu fails to be a proper anticipatory reference, and thus, independent claim 1 is patentable. Without acquiescing to the rejection of claims 2-6, 11-17, 19, 22, and 24, Applicants note that these claims depend directly from claim 1, as amended, and include all the limitations thereof, and thus, are also patentable. Reconsideration and withdrawal of the rejection of claims 1-6, 11-17, 19, 22, and 24 under 35 U.S.C. §102(e) is respectfully requested.

Rejections under 35 U.S.C. §103(a)

Dependent claims 7-10, 18, 20, 21, 23 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chu in view of Wolf. Also, claims 25 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chu in view of Bhattacherjee. Applicants respectfully traverse these rejections for at least the reasons provided below.

It is well settled that establishing obviousness requires a showing that the prior art provides every limitation of a claim and the invention as a whole. See M.P.E.P. §§ 2142, 2143. As a result, a reference, or combination of references, that does not teach or fairly suggest the invention as a whole cannot render that claim obvious. See, e.g., M.P.E.P. § 2141.02. Also, to modify or combine references, there must be some suggestion or motivation to do so in the reference itself or in the knowledge generally available to one of ordinary skill in the art that lies outside the disclosure of the patent application. See, e.g., M.P.E.P. §2142. Absent this motivation, a rejection under 35 U.S.C. § 103(a) is improper.

Without acquiescing to the rejection claims 7-10, 18, 20, 21, 23, 25, and 26, Applicants note that these claims depend directly or indirectly from independent claim 1 and include all the limitations thereof. Therefore, Applicants submit that these claims are patentable for at least the reasons independent claim 1, as amended, is patentable.

In addition, with respect to claims 21 and 26, the Office action states on pages 7-8, that it would have been obvious to one of ordinary skill in the art to optimize the thickness of the layers

to arrive at the invention claimed in these dependent claims. Applicants respectfully disagree.

Chu discloses a method of providing a means for monolithically integrating a photodetector with high speed and responsivity with a microwave transistor on a Si substrate in such a way as to allow high frequency performance better than Si and comparable to that achievable in GaAs. See Chu, page 2 at paragraph [0011]. Wolf discloses properties and deposition methods of chemical vapor deposited (CVD) SiO_2 film. See Wolf, pages 182-183. Bhattacherjee discloses a process for minimizing bird's beak in local oxidation of silicon by nitridizing a pad oxide using rapid thermal nitrizidation. See Bhattacherjee, Abstract. Thus, because prior art of record and the claimed invention are aimed at resolving different problems.

In contrast to Chu, Wolf, and Bhattacherjee, various embodiments of the Applicants' invention relate to methods for forming semiconductor structures that include providing one or more layers that impede undesirable consumption of the strained surface material, affect the introduction of dopants by scattering them during implantation, thereby reducing the probability of ion channeling, hinder out-diffusion of dopants during the annealing step, and/or protect the structures against contamination by particles during ion implantation. The thickness ranges of the layers recited in claims 21 and 26 are tailored to obtain the desirable performance of these layers. See Specification at paragraphs [0050] and [0052]. Chu, Wolf, and Bhattacherjee, however, are utterly silent with respect to utilizing screening layers for any of these purposes. Thus, one of skill in the art would find no motivation in Chu, Wolf, and Bhattacherjee, alone or in combination, to provide one or more layers having thickness(es) recited in claims 21 and 26.

In light of the foregoing, reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are respectfully requested.

Commonly-Owned Prior Art

The Office action, on page 9, identified several patents and publications and requested that Applicants state for the record whether this art was commonly owned as of the effective filing date of this application. Applicants confirm that the patent documents identified in the Office action are indeed disqualified as prior art under 35 U.S.C. 103(c). See, also MPEP 706.02(l), 715.01. The subject matter of these references and the claimed invention of the instant application were, at the time the invention was made, owned by AmberWave Systems Corporation ("ASC") or subject to an obligation of assignment to ASC. More specifically, common ownership by ASC of the instant application and these references for purposes of 35 U.S.C. § 103(c) is established by:

(1) an assignment recorded at Reel 015196, Frame 0431, dated October 30, 2003, that conveys the entire rights in the instant application to ASC.

(2) an assignment recorded at Reel 013651, Frame 0260, dated no later than December 19, 2002, that conveys the entire rights in U.S. Patent Application Serial No. 10/268,425 (U.S. Patent Application Publication No. US20040040493) to ASC;

(3) an assignment recently submitted for recordation to the USPTO, dated no later than August 25, 2003, that conveys the entire rights in U.S. Patent Application Serial No. 10/456,708 (U.S. Patent Application Publication No. US20040031979) to ASC;

(4) an assignment recorded at Reel 013534, Frame 0959, dated no later than October 25, 2002, that conveys the entire rights in U.S. Patent No. 6,838,728 to ASC;

(5) an assignment recorded at Reel 013491, Frame 0885, dated no later than October 23, 2002, that conveys the entire rights in U.S. Patent No. 6,831,292 to ASC;

(6) an assignment recorded at Reel 013452, Frame 0225, dated no later than October 21, 2002, that conveys the entire rights in U.S. Patent No. 6,680,496 to ASC;

Accordingly, Applicants respectfully note that all of these references are disqualified as prior art to the instant application.

CONCLUSION

Applicants respectfully submit that, in light of the foregoing remarks, claims 1-26 are in condition for allowance, and request that application proceed to issue. If, in the Examiner' s opinion, a telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues and to work with the Examiner toward placing the application in condition for allowance.

Respectfully submitted,

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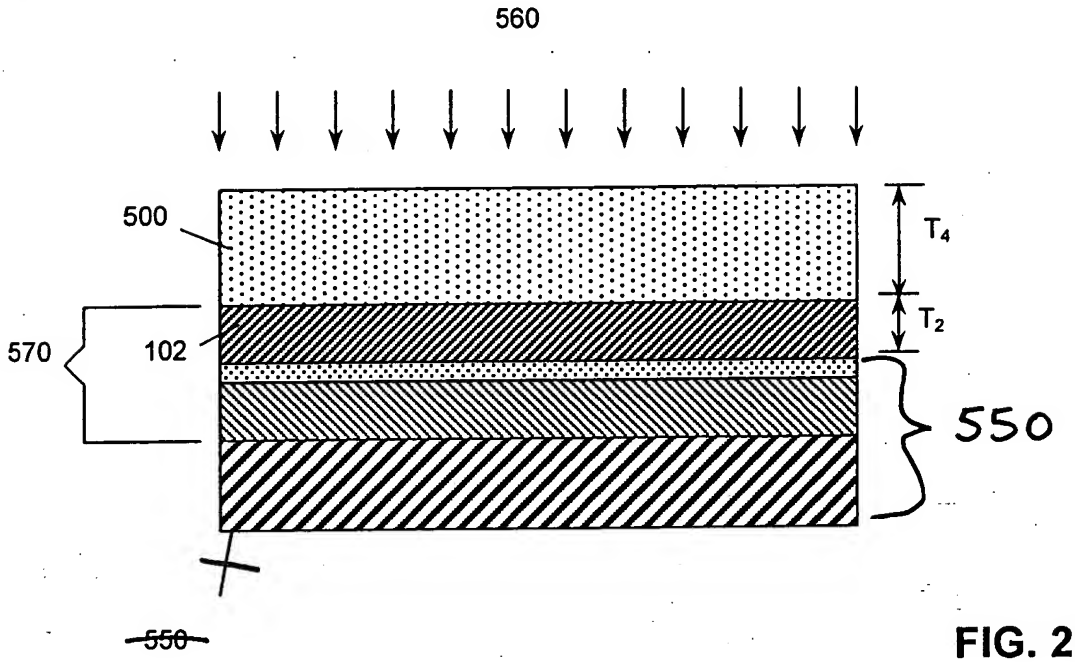

FIG. 2A

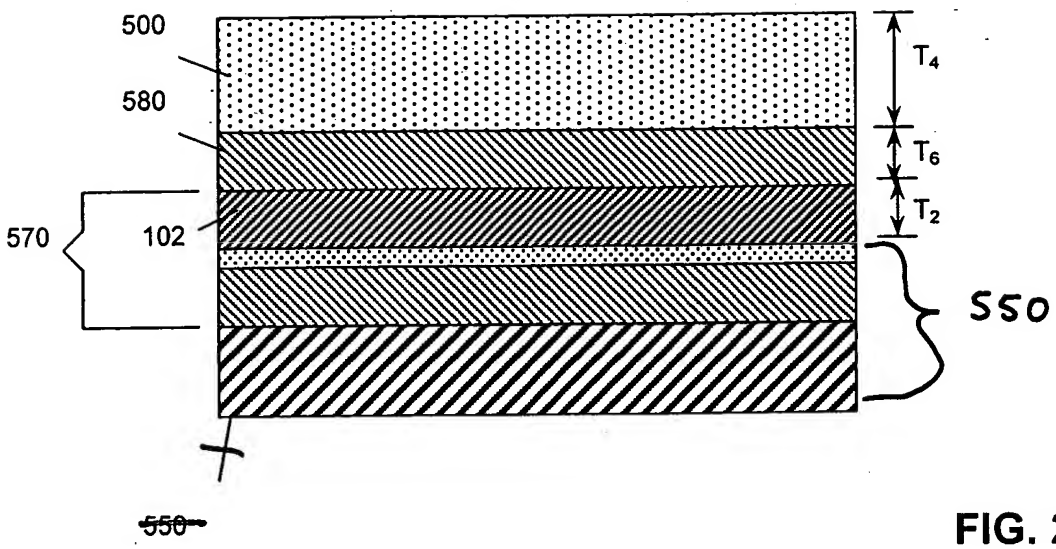

FIG. 2B

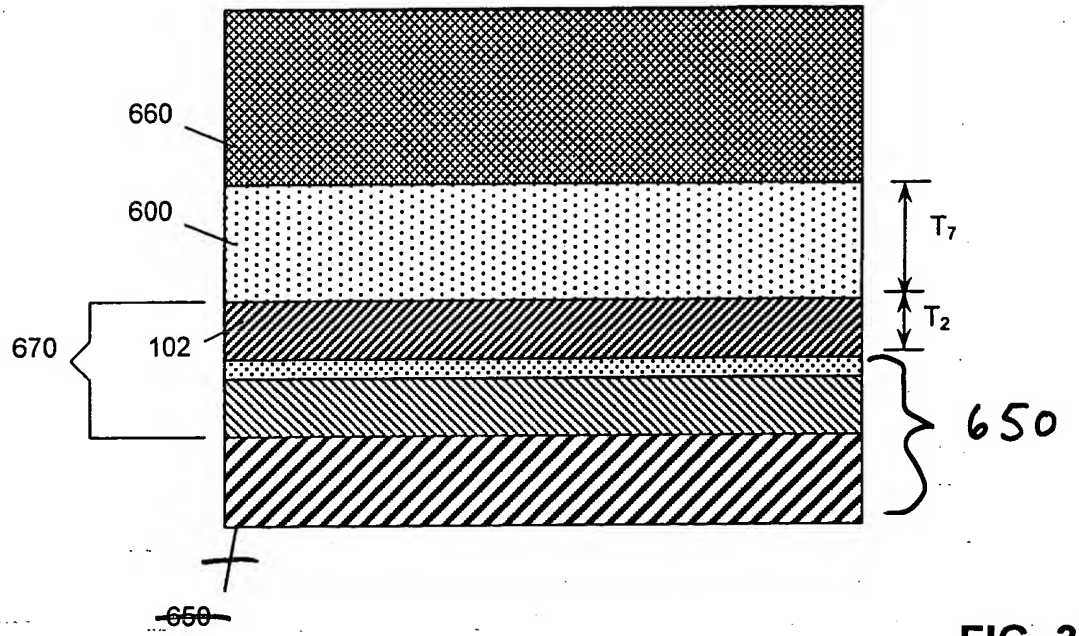

FIG. 3A

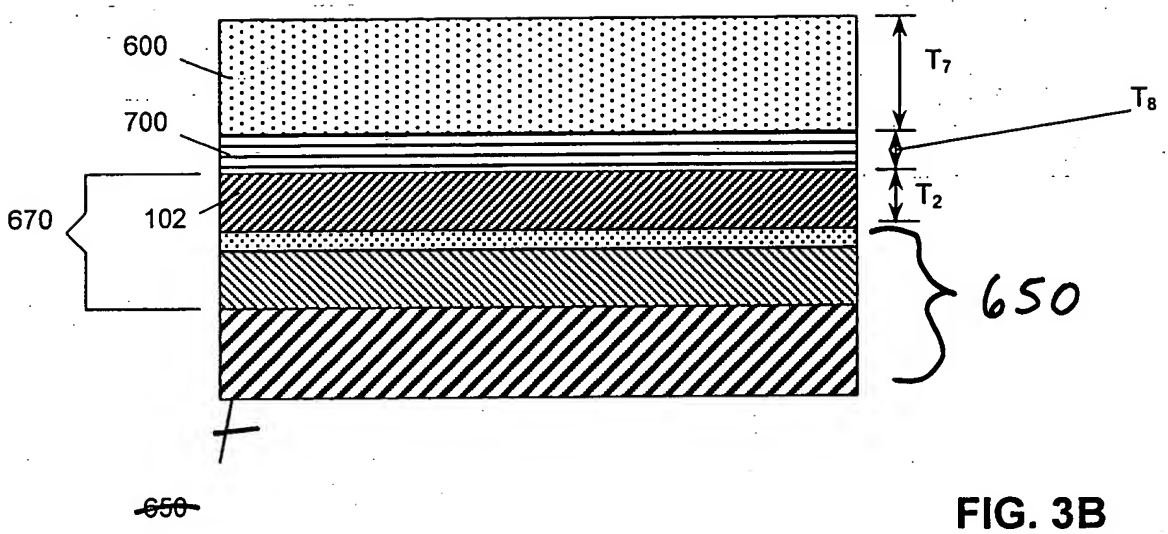

FIG. 3B